

IMPORTANT NOTICE

Due to potential delays in receiving mail, this solicitation contains the provision at FAR 52.215-5 which authorizes facsimile proposals. Offerors are encouraged to use alternatives to the mail when submitting proposals.

SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER
UNDER DPAS (15 CFR 350)

RATING

PAGE OF

1 26 PAGES

2. CONTRACT NO.

3. SOLICITATION NO.

N00173-02-R-CB03

4. TYPE OF SOLICITATION

☐ SEALED BID (IFB)

☒ NEGOTIATED (RFP)

5. DATE ISSUED

09 APR 02

6. REQUISITION/PURCHASE
NO.

7. ISSUED BY

CONTRACTING OFFICER

NAVAL RESEARCH LABORATORY

ATTN: CODE 3230.CB

WASHINGTON DC 20375-5326

CODE

N00173

8. ADDRESS OFFER TO (If other than Item 7)

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 03 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Bldg 222, Rm. 115 @ NRL until 4:00 local time 09 MAY 02
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section I, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION
CALL:

A. NAME

Cheri Burkhardt

B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)
(202)767-6542

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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS	%	20 CALENDAR DAYS	%	30 CALENDAR DAYS	%	CALENDAR DAYS	%
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE				

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
15B. TELEPHONE NO. (Include area code)	<input type="checkbox"/> 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()	23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM
24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY
26. NAME OF CONTRACTING OFFICER (Type or print)	27. UNITED STATES OF AMERICA (Signature of Contracting Officer)	28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

PART I - THE SCHEDULE
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS

B-1 SUPPLIES/SERVICES AND COSTS

ITEM NUMBER	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	ESTIMATED COST PLUS FIXED FEE
0001	The Contractor shall perform the work as described in Section C.	\$	\$	\$
0002	Data in accordance with Exhibit A (DD 1423)	* NSP	* NSP	* NSP
TOTAL ESTIMATED COST PLUS FIXED FEE			\$	\$

* *Not Separately Priced*

NOTICE TO OFFERORS: In addition to inserting the estimated cost and fixed fee for the base year above, the estimated cost and fixed fee for each optional extension of the term of the contract are to be inserted in Section H.

SECTION C
DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

C-1 STATEMENT OF WORK

The work and services to be performed hereunder shall be subject to the requirements and standards contained in Attachment (1), Statement of Work, with Exhibit A, Contract Data Requirements List, and all other Attachments cited in Section J, which are incorporated by reference into Section C.

C-2 REQUIREMENTS FOR ON-SITE CONTRACTORS

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the Requirements for On-Site Contractors dated 19 October 2001 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/home.htm>.

C-3 SUBCONTRACTING PLAN

Subcontracting Plan _____ dated _____ is hereby incorporated by reference and made a material part of this contract.

*(*this provision will be included and completed at time of award, if applicable)*

**SECTION D
PACKAGING AND MARKING****D-1 PACKAGING AND MARKING**

Preservation, packaging, packing and marking of all deliverable contract line items must conform to normal commercial packing standards to assure safe delivery at destination.

**SECTION E
INSPECTION AND ACCEPTANCE****E-1 INSPECTION AND ACCEPTANCE CLAUSES INCORPORATED BY REFERENCE****FAR CLAUSE TITLE**

52.246-5 - Inspection Of Services - Cost Reimbursement (APR 1984)

DFARS CLAUSE TITLE

252.246-7000 - Material Inspection And Receiving Report (DEC 1991)

E-2 INSPECTION AND ACCEPTANCE

Inspection and acceptance of the final delivery will be accomplished by the Technical Manager (TM) or Contracting Officer Representative (COR) designated in Section G of this contract. Inspection and acceptance will be performed at the Naval Research Laboratory, Washington DC 20375-5320.

SECTION F DELIVERIES OR PERFORMANCE

F-1 DELIVERIES OR PERFORMANCE CLAUSES INCORPORATED BY REFERENCE:

FAR CLAUSE	TITLE
52.242-15	- Stop-Work Order (AUG 1989) - Alternate I (APR 1984)
52.247-34	- F.O.B. Destination (NOV 1991)

F-2 PERIOD AND PLACE OF PERFORMANCE

(a)

(a) The term of this contract is from date of award through 12 months thereafter with four options of 12 months each, if exercised.

(b) The principal place of performance of this contract shall be ***NRL, Washington, D.C.***

SECTION G CONTRACT ADMINISTRATION DATA

G-1 PROCURING OFFICE REPRESENTATIVE

In order to expedite administration of the contract, the Administrative Contracting Officer (ACO) will direct inquiries to the appropriate office listed below. Please do not direct routine inquiries to the person listed in Item 20A on Standard Form 26.

Contract Matters- *

Security Matters- *

Safety Matters- *

Patent Matters- *

Release of Data- *

The ACO will forward invention disclosures and reports directly to the Associate Counsel for Patents, Code 1008.2, Naval Research Laboratory, Washington DC 20375-5320. The Associate Counsel for Patents will return the reports along with a recommendation to the Administrative Contracting Officer. The Associate Counsel for Patents will represent the Contracting Officer with regard to invention reporting matters arising under this contract.

(* To be completed at time of award)

G-2 CONTRACTING OFFICER'S REPRESENTATIVE (COR) - FUNCTIONS AND LIMITATIONS

* is hereby designated the cognizant COR who will represent the Contracting Officer in the administration of technical details within the scope of this contract and inspection and acceptance. The COR is not otherwise authorized to make any representations or commitments of any kind on behalf of the Contracting Officer or the Government. The COR does not have the authority to alter the Contractor's obligations or change the specifications in the contract. If, as a result of technical discussions, it is desirable to alter contract obligations or statements of work, a modification must be issued in writing and signed by the Contracting Officer. The COR is responsible for reviewing the bills and charges submitted by the Contractor and informing the ACO of areas where exceptions are to be taken.

(* To be completed at time of award)

.TECHNICAL DIRECTION MEMORANDUM (TDM)

- (a) For the purposes of this clause, technical direction includes the following:
 - (1) Direction to the Contractor which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise describes work which will accomplish the objectives described in the statement of work;
 - (2) Guidelines to the Contractor which assist in interpretation of drawings, specifications or technical portions of work description.
- (b) Technical instructions must be within the scope of work stated in the contract. Technical instructions may not be used to:
 - (1) Assign additional work under the contract;
 - (2) Direct a change as defined in the contract clause entitled "Changes";
 - (3) Increase or decrease the estimated contract cost, the fixed fee, or the time required for contract performance; or
 - (4) Change any of the terms, conditions or specifications of the contract
- (c) The TDM shall be written by the Contracting Officer's Representative (COR), with the original given to the Contractor and a copy retained in the CORs file. Technical direction may be issued orally only in emergency situations. If technical direction is issued orally, a TDM must follow within two (2) working days from the date of the oral direction. Amendments, corrections, or changes to TDMs shall also be in written format and shall include all the information set forth in paragraph (e) below.
- (d) A TDM shall be considered issued when the Government deposits it in the mail, or if transmitted by other means, when it is physically delivered to the contractor.
- (e) TDMs shall include, but not be limited to, the following information:
 - (1) Date of TDM,
 - (2) Contract Number,
 - (3) Reference to the relevant portion or item in the Statement of Work,
 - (4) The specific technical direction or clarification, and
 - (5) The signature of the COR.
- (f) CORs shall retain all files containing TDMs for a period of two (2) years after the final contract completion date.
- (g) The only individual authorized in any way to amend or modify any of the terms of this contract shall be the Contracting Officer. When, in the opinion of the Contractor, any technical direction calls for effort outside the scope of the contract or inconsistent with this special provision, the Contractor shall notify the

Contracting Officer in writing within ten (10) working days after its receipt.

G-4 SUBCONTRACTORS/CONSULTANTS

- (a) Advance notification or requests for consent pursuant to the contract clause entitled "Subcontracts" (FAR 52.244-2) shall be directed to the cognizant administrative contracting officer (ACO).
- (b) The following subcontractors/consultants have been identified in the Contractor's proposal as necessary for performance of this contract:

Subcontractor/Consultant Name	Estimated Cost
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(Paragraph (b) will be included and filled in at time of award if subcontractor/consultants are proposed by the successful offeror)

G-5 NAPS 5252.232-9001 - SUBMISSION OF INVOICES (COST-REIMBURSEMENT, TIME-AND-MATERIALS, LABOR-HOUR, OR FIXED PRICE INCENTIVE (JUL 1992)

- (a) "Invoice" as used in this clause includes contractor requests for interim payments using public vouchers (SF 1034) but does not include contractor requests for progress payments under fixed price incentive contracts.
- (b) The Contractor shall submit invoices and any necessary supporting documentation, in an original and 4 copies, to the contract auditor at the following address:

(To be completed at time of award)

unless delivery orders are applicable, in which case invoices will be segregated by individual order and submitted to the address specified in the order. In addition, an information copy shall be submitted to [See Section G for designated COR]. Following verification, the contract auditor will forward the invoice to the designated payment office for payment in the amount determined to be owing, in accordance with the applicable payment (and fee) clause(s) of this contract.

(c) Invoices requesting interim payments shall be submitted no more than once every two weeks, unless another time period is specified in the Payments clause of this contract. For indefinite delivery type contracts, interim payment invoices shall be submitted no more than once every two weeks for each delivery orders. There shall be a lapse of no more than 30 calendar days between performance and submission of an interim payment invoice.

(d) In addition to the information identified in the Prompt Payment clause herein, each invoice shall contain the following information, as applicable:

- (1) Contract line item number (CLIN)
 - (2) Subline item number (SLIN)
 - (3) Accounting Classification Reference Number(ACRN)
 - (4) Payment terms
 - (5) Procuring activity
 - (6) Date supplies provided or services performed
 - (7) Costs incurred and allowable under the contract
 - (8) Vessel (e.g., ship, submarine or other craft) or system for which supply/service is provided
- (e) A DD Form 250, "Material Inspection and Receiving Report",

- ☐ is required with each invoice submittal.
- ☒ is required only with the final invoice.
- ☐ is not required.

(f) A Certificate of Performance

- ☐ shall be provided with each invoice submittal.
- ☒ is not required.

(g) The Contractor's final invoice shall be identified as such, and shall list all other invoices (if any) previously tendered under this contract.

(h) Cost of performance shall be segregated, accumulated and invoiced to the appropriate ACRN categories to the extent possible. When such segregation of costs by ACRN is not possible for invoices submitted with CLIN/SLINS with more than one ACRN, an allocation ratio shall be established in the same ratio as the obligations cited in the accounting data so that costs are allocated on a proportional basis.

G-6 INCREMENTAL FUNDING

Pursuant to the Limitation of Funds clause (FAR 52.232-22), the total amount allotted to this contract is \$* and it is estimated that this amount is sufficient for contract performance through *.

*(*this provision will be included and completed at time of award, if applicable)*

G-7 INFORMATIONAL SUBLINE ITEMS

It is anticipated that the research and development services performed under this contract will be paid for from multiple sources of funds. Informational subline items will be established as necessary to identify each accounting citation classification.

G-8 PAYMENT INSTRUCTIONS FOR MULTIPLE ACCOUNTING CLASSIFICATION CITATIONS (COST-REIMBURSEMENT)

The purpose of these instructions is to permit the paying office to charge the accounting classification citations in the contract in a manner that reflects the performance of the contract. These instructions do not create any obligation on the part of the Government or the contractor nor do they in any way alter any obligation created by any other provision of the contract. Invoices should be paid from available ACRNs in the following order:

- (a) ACRNs cited on the contractor's invoice.
- (b) On a proportional basis from any ACRNs assigned to funds which will cancel at the end of the current fiscal year.
- (c) The ACRN assigned to the following line of accounting:
97X4930.NH4A 000 77777 0 000173 2F 000000 N00173Z45000.
- (d) If funds appropriated in more than one fiscal year are allotted to the contract, the ACRN assigned to the oldest allotment of funds.
- (e) On a proportional basis from all ACRNs assigned to allotments of funds appropriated in a single fiscal year.

SECTION H SPECIAL CONTRACT REQUIREMENTS

H-1 TYPE OF CONTRACT

This is a *

*(*To be completed at time of award)*

H-2 ONR 5252.237-9705 - KEY PERSONNEL (DEC 88)

- (a) The Contractor agrees to assign to the contract tasks those persons whose resumes were submitted with its proposal and who are necessary to fulfill the requirements of the contract as "key personnel". No substitutions may be made except in accordance with this clause.
- (b) The Contractor understands that during the first ninety (90) days of the contract performance period, no personnel substitutions will be permitted unless these substitutions are unavoidable because of the incumbent's sudden illness, death or termination of employment. In any of these events, the Contractor shall promptly notify the Contracting Officer and provide the information described in paragraph (c) below. After the initial ninety (90) day period the Contractor must submit to the Contracting Officer all proposed substitutions, in writing, at least fifteen (15) days in advance (thirty (30) days if security clearance must be obtained) of any proposed substitution and provide the information required by paragraph (c) below.
- (c) Any request for substitution must include a detailed explanation of the circumstances necessitating the proposed substitution, a resume for the proposed substitute, and any other information requested by the Contracting Officer. Any proposed substitute must have qualifications equal to or superior to the qualifications of the incumbent. The Contracting Officer or his/her authorized representative will evaluate such requests and promptly notify the Contractor of his/her approval or disapproval thereof.
- (d) In the event that any of the identified key personnel cease to perform under the contract and the substitute is disapproved, the contract may be immediately terminated in accordance with the Termination clause of the contract.

The following are identified as key personnel: *

Physical/Electrical Engineer
Senior Technician
Data Analyst

*(*To be completed at time of award)*

H-3 ONR 5252.216-9706 - LEVEL OF EFFORT (DEC 88)

- (a) The Contractor agrees to provide the total level of effort specified in the next sentence in performance of the work described in this contract. The total level of effort for performance of this contract shall be **624,000** total hours of direct labor, including subcontractor direct labor for those subcontractors specifically identified in the Contractor's proposal as having hours included in the proposed level of effort. A breakdown of labor categories and hours is set forth in paragraph (k) below.
- (b) The level of effort for this contract shall be expended at an average rate of **4,160** hours per month. It is understood and agreed that the rate of hours per month may fluctuate in pursuit of the technical objective, provided such fluctuation does not result in the use of the total hours of effort prior to the expiration of the term of the contract.
- (c) The Contractor is required to notify the Contracting Officer when any of the following situations occur, or are anticipated to occur: If during any three consecutive months the monthly average is exceeded by 25% or, if at any time it is forecast that during the last three months of the contract less than 50% of the monthly average will be used during any given month; or, when 85% of the total level of effort has been expended.
- (d) If, during the term of the contract, the Contractor finds it necessary to accelerate the expenditure of direct labor to such an extent that the total hours of effort specified would be used prior to the expiration of the term, the Contractor shall notify the Contracting Officer in writing, setting forth the acceleration required, the probable benefits which would result, and an offer to undertake the acceleration at no increase in the estimated cost or fixed fee together with an offer setting forth a proposed level of effort, cost breakdown, and proposed fixed fee for continuation of the work until expiration of the term hereof. The offer shall provide that the work proposed will be subject to the terms and conditions of this contract and any additions or changes required by then current law, regulations, or directives, and that the offer, with a written notice of acceptance by the Contracting Officer, shall constitute a binding contract. The Contractor shall not accelerate any effort until receipt of such written approval by the Contracting Officer. Any agreement to accelerate will be formalized by contract modification.
- (e) The Contracting Officer may, by written order, direct the Contractor to accelerate the expenditure of direct labor such that the total hours of effort specified in paragraph (a) above would be used prior to the expiration of the term. This order shall specify the acceleration required and the resulting revised term. The Contractor shall acknowledge this order within five days of receipt.
- (f) If the total level of effort specified in paragraph (a) above is not provided by the Contractor during the term of this contract, the Contracting Officer shall either (i) reduce the fixed fee of this contract as follows:

$$\text{Fee Reduction} = \text{Fixed Fee} \times \frac{(\text{Required LOE Hours} - \text{Expended LOE Hours})}{\text{Required LOE Hours}}$$

or (ii) subject to the provisions of the clause of this contract entitled "Limitation of Cost," require the Contractor to continue to perform the work until the total number of hours of direct labor specified in paragraph (a) shall have been expended, at no increase in the fixed fee of this contract.

(g) In the event the government fails to fully fund the contract in a timely manner, the term of the contract may be extended accordingly with no change to cost or fee. If the government fails to fully fund the contract, the fee will be adjusted in direct proportion to that effort which was performed.

(h) Notwithstanding any of the provisions in the above paragraphs, the Contractor may furnish hours up to five percent in excess of the total hours specified in paragraph (a) above, provided that the additional effort is furnished within the term hereof, and provided further that no increase in the estimated cost or

fixed fee is required, and no adjustment in the fixed fee shall be made provided that the Contractor has delivered at least 95% of the level of effort required in paragraph (a) above.

(i) It is understood that the mix of labor categories provided by the Contractor under the contract, as well as the distribution of effort among those categories, may vary considerably from the initial mix and distribution of effort which was estimated by the government or proposed by the Contractor.

(j) Nothing herein shall be construed to alter or waive any of the rights or obligations of either party pursuant to the Clause entitled "Limitation of Costs" or "Limitation of Funds," either of which clauses as incorporated herein applies to this contract.

(k) The anticipated breakdown by labor category of the total level of effort is as follows:

<u>Labor Category</u>	<u>Hours</u>
Physicist/Electrical Engineer I	31,200
Physicist/Electrical Engineer II	20,800
Physicist/Electrical Engineer III	20,800
Physicist/Electrical Engineer IV	20,800
Physicist/Electrical Engineer V	20,800
Physicist/Electrical Engineer VI	20,800
Physicist/Electrical Engineer VII	31,200
Physicist/Electrical Engineer VIII	20,800
Physicist/Electrical Engineer IX	20,800
Research Chemist I	20,800
Research Chemist II	20,800
Engineering Associate I	20,800
Engineering Associate II	20,800
Engineering Associate III	20,800
Engineering Associate IV	20,800
Engineering Associate V	20,800
Engineering Associate VI	20,800
Data Analyst I	20,800
Data Analyst II	20,800
Senior Technician I	20,800
Senior Technician II	20,800
Senior Technician III	20,800
Electronics Technician I	20,800
Electronics Technician II	20,800
Electronics Technician III	20,800
Electronics Technician IV	20,800
Technician I	20,800
Technician II	20,800
Technician III	20,800

H-4 ONR 5252.235-9714 - REPORT PREPARATION (FEB 02)

Scientific or technical reports prepared by the Contractor and deliverable under the terms of this contract will be prepared in accordance with format requirements contained in ANSI/NISO Z39.18-1995, Scientific and Technical Reports: Elements, Organization, and Design.

[NOTE: All NISO American National Standards are available as free, downloadable pdf(s) at <http://www.niso.org/standards/index.html> . NISO standards can also be purchased in hardcopy form from NISO Press Fulfillment, P. O. Box 451, Annapolis Junction, MD 20701-0451 USA. Telephone U.S. and Canada: (877) 736-6476; Outside the U.S. and Canada: 301-362-6904 ax: 301-206-9789.]

H-5 ELECTRONIC AND INFORMATION TECHNOLOGY (EIT)

In accordance with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d), all EIT supplies and services provided under this contract must comply with the applicable accessibility standards issued by the Architectural and Transportation Barriers Compliance Board at 36 CFR part 1194 (see FAR Subpart 39.2). Electronic and information technology (EIT) is defined at FAR 2.101.

H-6 OPTION TO EXTEND THE TERM OF THE CONTRACT

This contract shall be renewable at the unilateral option of the Government by the Contracting Officer giving written notice of renewal to the Contractor within the existing term of the contract. The Government may exercise its option to renew the contract a total of four (4) times and each such renewal shall extend the term of the contract by twelve (12) months. The Contractor agrees that performance under each such renewal shall be accomplished in accordance with all of the terms and conditions of this contract and at the estimated cost and fixed fee set forth below:

First Option

Estimated Cost:	\$
Fixed Fee:	\$
Estimated Cost Plus Fixed Fee:	\$

Second Option

Estimated Cost:	\$
Fixed Fee:	\$
Estimated Cost Plus Fixed Fee:	\$

Third Option

Estimated Cost:	\$
Fixed Fee:	\$
Estimated Cost Plus Fixed Fee:	\$

Fourth Option

Estimated Cost:	\$
Fixed Fee:	\$
Estimated Cost Plus Fixed Fee:	\$

H-7 ON-SITE USE OF GOVERNMENT PROPERTY

It is anticipated that Government property will be used by the contractor's personnel in the performance of that portion of the contract performed on-site at the U.S. Naval Research Laboratory (NRL) including any of its field sites. Such use will be on a rent free basis and all such property shall be considered to remain in the possession and control of the NRL for property responsibility and accountability purposes.

H-8 REPRESENTATIONS AND CERTIFICATIONS

The Contractor's completed Representations, Certifications, and Other Statements of Offerors or Respondents is incorporated herein by reference in any resultant award.

H-9 SUBCONTRACTING PLAN

The contractor's Comprehensive Small Business Subcontracting Plan is incorporated into this contract in accordance with DFARS SUBPART 219.7 *Test Program for Negotiation of Comprehensive Small Business Subcontracting Plans*.

PART II - CONTRACT CLAUSES
SECTION I
CONTRACT CLAUSES

I-1 52.252-2 - CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

<http://heron.nrl.navy.mil/contracts/home.htm>

a. FEDERAL ACQUISITION REGULATION CLAUSES

<u>FAR CLAUSE</u>	<u>TITLE</u>
52.202-1	- Definitions (DEC 2001)
52.203-3	- Gratuities (APR 1984)
52.203-5	- Covenant Against Contingent Fees (APR 1984)
52.203-6	- Restrictions On Subcontractor Sales To The Government (JUL 1995)
52.203-7	- Anti-Kickback Procedures (JUL 1995)
52.203-8	- Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (JAN 1997)
52.203-10	- Price Or Fee Adjustment For Illegal Or Improper Activity (JAN 1997)
52.203-12	- Limitation On Payments To Influence Certain Federal Transactions (JUN 1997)
52.204-2	- Security Requirements (AUG 1996)
52.204-4	- Printed Or Copied Double-Sided On Recycled Paper (AUG 2000)
52.209-6	- Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment (JUL 1995)
52.211-15	- Defense Priority And Allocation Requirements (SEP 1990)
52.215-2	- Audit And Records-Negotiation (JUN 1999)
52.215-8	- Order Of Precedence - Uniform Contract Format (OCT 1997)
52.215-11	- Price Reduction For Defective Cost Or Pricing Data - Modifications (OCT 1997)
52.215-13	- Subcontractor Cost Or Pricing Data Modifications (OCT 1997)
52.215-14	- Integrity Of Unit Prices (OCT 1997)
52.215-15	- Pension Adjustments And Asset Reversions (DEC 1998)
52.215-17	- Waiver Of Facilities Capital Cost Of Money (OCT 1997) (<i>will be included if the successful offeror does not propose facilities capital cost of money</i>)
52.215-18	- Reversion Or Adjustment Of Plans For Post-Retirement Benefits (PRB) Other Than Pensions (OCT 1997)
52.215-19	- Notification Of Ownership Changes (OCT 1997)
52.215-21	- Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data -Modifications (OCT 1997) - Alternate III (OCT 1997)
52.216-7	- Allowable Cost And Payment (FEB 2002) (<i>If the contract is with an educational institution, modify the clause by deleting from paragraph (a) "Subpart 31.2" and substitute "Subpart 31.3". If the contract is with a state or local government, delete</i>

from paragraph (a) "Subpart 31.2" and substitute "Subpart 31.6". If the contract is with a nonprofit other than an educational institution, a state or local government, or a nonprofit organization exempted under OMB Circular A-122, modify the clause by deleting from paragraph (a) "Subpart 31.2" and substituting "Subpart 31.7".)

- 52.216-8 - Fixed-Fee (MAR 1997)
- 52.219-4 - Notice Of Price Evaluation Preference For HUBZone Small Business Concerns (JAN 1999) ☐ Offeror elects to waive the evaluation preference.
- 52.219-8 - Utilization Of Small Business Concerns (OCT 2000)
- 52.219-9 - Small Business Subcontracting Plan (JAN 2002) - Alternate II (OCT 2001)
- 52.219-16 - Liquidated Damages-Subcontracting Plan (JAN 1999)
- 52.219-25 - Small Disadvantaged Business Participation Program-Disadvantaged Status And Reporting (OCT 1999)
- 52.222-2 - Payment For Overtime Premiums (JUL 1990) -The Use Of Overtime Is Authorized Under This Contract If The Overtime Premium Does Not Exceed "0"
- 52.222-3 - Convict Labor (AUG 1996)
- 52.222-21 - Prohibition Of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (FEB 1999)
- 52.222-35 - Equal Opportunity For Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans (DEC 2001)
- 52.222-36 - Affirmative Action For Workers With Disabilities (JUN 1998)
- 52.222-37 - Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans (DEC 2001)
- 52.223-3 - Hazardous Material Identification And Material Safety Data (JAN 1997)
- 52.223-5 - Pollution Prevention And Right-To-Know Information (APR 1998)
- 52.223-6 - Drug-Free Workplace (MAY 2001)
- 52.223-14 - Toxic Chemical Release Reporting (OCT 2000)
- 52.225-13 - Restrictions On Certain Foreign Purchases (JUL 2000)
- 52.227-1 - Authorization And Consent (JUL 1995)- Alternate I (APR 1984)
- 52.227-2 - Notice And Assistance Regarding Patent And Copyright Infringement (AUG 1996)
- 52.227-10 - Filing Of Patent Application- Classified Subject Matter (APR 1984)
- 52.227-11 - Patent Rights - Retention By The Contractor (Short Form) (JUN 1997)
(will be included if the successful offeror is a small business or a non-profit organization)
- 52.227-12 - Patent Rights - Retention By The Contractor (Long Form) (JAN 1997)
(will be included if the successful offeror is not a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.230-2 - Cost Accounting Standards (APR 1998)
- 52.232-9 - Limitation On Withholding Of Payments (APR 1984)
- 52.232-17 - Interest (JUN 1996)
- 52.232-20 - Limitation Of Cost (APR 1984) *(Applicable when the contract or task order is fully funded)*
- 52.232-22 - Limitation Of Funds (APR 1984) *(Applicable when the contract or task order is not fully funded)*
- 52.232-23 - Assignment Of Claims (JAN 1986) Alternate I (APR 1984)
- 52.232-25 - Prompt Payment (FEB 2002)

- 52.232-25 - Prompt Payment (FEB 2002) Alternate I (FEB 2002)
- 52.232-33 - Payment By Electronic Funds Transfer-Central Contractor Registration (MAY 1999)
- 52.233-1 - Disputes (DEC 1998) - Alternate I (DEC 1991)
- 52.233-3 - Protest After Award (AUG 1996) - Alternate I (JUN 1985)
- 52.237-2 - Protection Of Government Buildings, Equipment And Vegetation (APR 1984)
- 52.237-3 - Continuity Of Services (JAN 1991)
- 52.242-1 - Notice Of Intent To Disallow Costs (APR 1984)
- 52.242-3 - Penalties For Unallowable Costs (MAY 2001)
- 52.242-4 - Certification of Final Indirect Costs (JAN 1997)
- 52.242-13 - Bankruptcy (JUL 1995)
- 52.243-2 - Changes - Cost-Reimbursement (AUG 1987) - Alternate V (APR 1984)
- 52.243-6 - Change Order Accounting (APR 1984)
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (AUG 1998)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 52.244-6 - Subcontracts For Commercial Items (DEC 2001)
- 52.245-5 - Government Property (Cost-Reimbursement, Time-And-Material, Or Labor-Hour Contracts) (JAN 1986) (DEVIATION)
- 52.245-18 - Special Test Equipment (FEB 1993)
- 52.246-23 - Limitation Of Liability (FEB 1997)
- 52.246-25 - Limitation Of Liability - Services (FEB 1997)
- {Services, except ADP support services, 52.247-1 - Commercial Bill Of Lading Notations (APR 1984)
- 52.247-63 - Preference For U. S. Flag Carriers (JAN 1997)
- 52.249-6 - Termination (Cost-Reimbursement) (SEP 1996)
- 52.249-14 - Excusable Delays (APR 1984)
- 52.251-1 - Government Supply Sources (APR 1984)
- 52.252-6 - Authorized Deviations in Clauses (APR 1984)(fill in Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2))
- 52.253-1 - Computer Generated Forms (JAN 1991)

b. DEPARTMENT OF DEFENSE FEDERAL ACQUISITION REGULATION CLAUSES

DFARS CLAUSE TITLE

- 252.201-7000 - Contracting Officer's Representative (DEC 1991)
- 252.203-7001 - Prohibition On Persons Convicted Of Fraud Or Other Defense Contract Related Felonies (MAR 1999)
- 252.203-7002 - Display Of DoD Hotline Poster (DEC 1991)
- 252.204-7000 - Disclosure Of Information (DEC 1991)
- 252.204-7003 - Control Of Government Personnel Work Product (APR 1992)
- 252.204-7004 - Required Central Contractor Registration (NOV 2001)
- 252.204-7005 - Oral Attestation Of Security Responsibilities (NOV 2001)
- 252.205-7000 - Provision Of Information To Cooperative Agreement Holders (DEC 1991)
- 252.209-7000 - Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate-Range Nuclear Forces (INF) Treaty (NOV 1995)
- 252.209-7004 - Subcontracting With Firms That Are Owned Or Controlled By The Government Of A Terrorist Country (MAR 1998)
- 252.215-7000 - Pricing Adjustments (DEC 1991)

- 252.215-7002 - Cost Estimating System Requirements (OCT 1998)
- 252.219-7003 - Small Business And Small Disadvantaged Business Subcontracting Plan (DoD Contracts) (APR 1996)
- 252.223-7004 - Drug-Free Work Force (SEP 1988)
- 252.223-7006 - Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)
- 252.225-7001 - Buy American Act And Balance Of Payments Program (MAR 1998)
- 252.225-7002 - Qualifying Country Sources As Subcontractors (DEC 1991)
- 252.225-7012 - Preference For Certain Domestic Commodities (AUG 2000)
- 252.225-7026 - Reporting Of Contract Performance Outside The United States (JUN 2000)
- 252.225-7031 - Secondary Arab Boycott Of Israel (JUN 1992)
- 252.225-7043 - Antiterrorism/Force Protection Policy For Defense Contractors Outside The United States (JUN 1998) (fill in : Naval Criminal Investigative Service (NCIS), Code 24, telephone, DSN 228-9113 or commercial (202)433-9113)
- 252.226-7001 - Utilization of Indian Organizations and Indian-Owned Economic Enterprises-DoD Contracts (SEP 2001)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995)
- 252.227-7016 - Rights In Bid Or Proposal Information (JUN 1995)
- 252.227-7030 - Technical Data--Withholding Of Payment (MAR 2000)
- 252.227-7034 - Patents--Subcontracts (APR 1984)
- 252.227-7036 - Declaration Of Technical Data Conformity (JAN 1997)
- 252.227-7037 - Validation Of Restrictive Markings On Technical Data (SEP 1999)
- 252.227-7039 - Patents--Reporting Of Subject Inventions (APR 1990)
- 252.231-7000 - Supplemental Cost Principles (DEC 1991)
- 252.235-7010 - Acknowledgment Of Support And Disclaimer (MAY 1995)
- 252.235-7011 - Final Scientific Or Technical Report (SEP 1999)
- 252.242-7000 - Post Award Conference (DEC 1991)
- 252.242-7004 - Material Management And Accounting System (DEC 2000)
- 252.243-7002 - Requests For Equitable Adjustment (MAR 1998)
- 252.244-7000 - Subcontracts For Commercial Items And Commercial Components (DOD Contracts) (MAR 2000)
- 252.245-7001 - Reports Of Government Property (MAY 1994)
- 252.247-7023 - Transportation Of Supplies By Sea (MAR 2000)
- 252.247-7024 - Notification Of Transportation Of Supplies By Sea (MAR 2000)
(will be included if the successful offeror made a negative response to the inquiry at DFARS 252.247-7022)
- 252.251-7000 - Ordering From Government Supply Sources (MAY 1995)

I-2 FAR 52.223-11 - OZONE-DEPLETING SUBSTANCES (MAY 2001)

(a) *Definitions.* "Ozone-depleting substance", as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as –

- (1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or
- (2) Class II, including, but not limited to, hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

WARNING

Contains (or manufactured with, if applicable) _____, a substance(s)
which harm(s) public health and environment by destroying ozone in the upper atmosphere.

*The Contractor shall insert the name of the substance(s).

I-3 DFARS 252.225-7008 - SUPPLIES TO BE ACCORDED DUTY- FREE ENTRY (MAR 1998)

In accordance with paragraph (b) of the Duty-Free Entry clause of this contract, in addition to duty-free entry for all qualifying country supplies (end products and components) and all eligible end products subject to applicable trade agreements (if this contract contains the Buy American Act - Trade Agreements - Balance of Payments Program clause or the Buy American Act - North American Free Trade Agreement Implementation Act - Balance of Payments Program clause), the following foreign end products that are neither qualifying country end products nor eligible end products under a trade agreement, and the following nonqualifying country components, are accorded duty free entry.

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS
SECTION J
LIST OF ATTACHMENTS

- J-1** Attachment (1) - Statement Of Work - 9 Pages, With Exhibit A - DD Form 1423, Contract Data Requirements List, 3 Pages.
- J-2** Attachment (2) - DD Form 254, Contract Security Classification Specification, Ser 011-02 Dated February 14, 2002, 2 Pages.
- J-3** Attachment (3) – Personnel Qualifications, 6 Pages.
- J-4** ATTACHMENT (4) – LIST OF PARTIES INTERESTED IN TEAMING, 1 PAGE (*WILL BE DELETED AT TIME OF AWARD AND ATTACHMENT (4) WILL BE “RESERVED”*)
- J-5** Attachment () – Accounting and Appropriation Data- 1 page. *
(** To be included at time of award*)

PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION - K
REPRESENTATIONS, CERTIFICATIONS
AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

K-1 Representations, Certifications, and Other Statements of Offerors or Respondents

Each Offeror must submit a completed Representations, Certifications, and Other Statements Of Offerors or Respondents with its proposal which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/rep&certs.htm>

K-2 FILL IN FOR FAR 52.219-1 - SMALL BUSINESS PROGRAM REPRESENTATIONS (MAR 2001)

The fill in information is as follows:

The NAICS code for this acquisition is 541710

The small business size standard is. 500

SECTION L
INSTRUCTIONS CONDITIONS AND NOTICES
TO OFFERORS OR RESPONDENTS

L-1 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

FAR CLAUSE TITLE

52.204-6	-	Data Universal Numbering System (DUNS) Number (JUNE 1999)
52.214-34	-52.215-1	- Instructions To Offerors- Competitive Acquisition (MAY 2001)
52.215-5	-	Facsimile Proposals (OCT 1997) Paragraph (c) is completed as follows: (202) 767- 6197(primary) or (202) 767-0494 (alternate). In addition facsimile proposals may be transmitted by e-mail to burkhardt@contracts.nrl.navy.mil (primary) or parnell@nrl.navy.mil (alternate) in either Microsoft Word (version 97 or earlier) or pdf format.
52.215-16	-	Facilities Capital Cost Of Money (OCT 1997)
52.219-24	-	Small Disadvantaged Business Participation Program - Targets (OCT 2000)
52.222-24	-	Preaward On-Site Equal Opportunity Compliance Evaluation (FEB 1999)
52.237-10	-	Identification of Uncompensated Overtime (OCT 1997)

L-2 FAR 52.211-14 - NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a ☐ DX rated order; ☒ DO rated order certified for national use under the Defense Priorities and Allocations system (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L-3 FAR 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)ALTERNATE IV (OCT 1997)

- (a) Submission of cost or pricing data is not required.
- (b) Provide information described in Section L-, Volume II – Business Proposal. More detailed information could be required and then be requested if and when it is then deemed to be necessary for the evaluation of a specific proposal

L-4 FAR 52.216-1 - TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Cost Plus Fixed Fee**Term** contract resulting from this solicitation.

L-5 FAR 52.233-2 - SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from the Control Desk, Code 3200, Bldg. 222, Rm. 115, Naval Research Laboratory, 4555 Overlook Ave., S.W., Washington DC 20375-5326.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-6 DFARS 252.227-7017 - IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995)

(a) The terms used in this provision are defined in following clause or clauses contained in this solicitation—

(1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.

(2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.

(b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.

(c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.

(d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror:

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of
Technical Data or Computer Software.

The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data Computer Software to be Furnished With Restrictions*	Basis for Assertion **	Asserted Rights Category ***	Name of Person Asserting Restrictions****
(List)*****	(List)	(List)	(List)

* For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For computer software or computer software documentation identify the software or documentation.

** Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

*** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).

**** Corporation, individual, or other person, as appropriate.

***** Enter "none" when all data or software will be submitted without restrictions.

Date

Printed Name and Title

Signature

(End of identification and assertion)

- (e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.
- (f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

L-7 DFARS 252.227-7028 - TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)

The Offeror shall attach to its offer an identification of all documents or other media incorporating technical data or computer software it intends to deliver under this contract with other than unlimited rights that are identical or substantially similar to documents or other media that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The attachment shall identify - -

- (a) The contract number under which the data or software were produced;
- (b) The contract number under which, and the name and address of the organization to whom, the

- data or software were most recently delivered or will be delivered; and
- (c) Any limitations on the Government's rights to use or disclose the data or software, including, when applicable, identification of the earliest date the limitations expire.

L-8 GOVERNMENT-FURNISHED PROPERTY

No material, labor, or facilities will be furnished by the Government unless provided for in the solicitation.

L-9 INQUIRIES CONCERNING THE RFP

Any questions concerning the RFP must be submitted in writing to the Contracting Officer at the location noted in blocks 7 and 9 of the Standard Form 33, "Solicitation, Offer and Award," no less than fifteen (15) days before closing. The Government will not consider questions received after this date. Offerors are cautioned against directing any questions concerning this RFP to technical personnel at the Naval Research Laboratory.

L-10 INSTRUCTIONS FOR SUBMISSION AND INFORMATION REQUIRED TO EVALUATE PROPOSALS

- (1) Information for the technical/management proposal shall be placed in Volume I and be completely separate from the business proposal (Volume II).
- (2) Proposal Identification/Mailing - The proposal should be packaged for delivery so as to permit safe and timely arrival at destination. The proposal package should be sent to the address shown in Block 7 of the RFP face page and marked:

Solicitation No. N00173-02-R-CB03
Closing Date:
(As specified in Block 9, RFP face page)
Attn: Code 3230.CB

- (3) Proposal Format and Length - No attempt is made to restrict the proposal format and style. However, the proposal should be written and organized so as to be compatible with the RFP, the Statement of Work, company's organization and accounting structure, and proposed cost estimate. Offerors are encouraged to use recycled paper and maximize the use of double sided copying when preparing responses to solicitations.

L-11 VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 3 COPIES .

- (1) Include a matrix indicating proposed labor hours by skill category required to perform the statement of work. This matrix shall not contain labor rates or any other indication of price. Please note that the contractor must propose in accordance with the level of effort breakdown identified in Section H of this Solicitation.
- (2) The following information is required for evaluation of your technical/management :

(a) PERSONNEL QUALIFICATIONS

The proposer should provide convincing proof that the company has, or has the ability to obtain, personnel with relevant experience in the scientific and technical areas described in the Statement of Work. These areas are highly specialized fields and personnel without actual experience in these areas are not acceptable. Attachment 2 of the Solicitation sets forth the desired qualifications. It is essential for the offeror to demonstrate that key personnel will be capable of obtaining a SECRET clearance. The proposal should indicate the specific personnel to be assigned to this effort, their background and pertinent experience, and the amount of effort each will be performing on this contract. This will include the education level, experience (both general and project related), and availability of sufficient key project professional and technical personnel by the prime contractor as well as any proposed subcontractors.

(b) COMPANY EXPERIENCE

Proposals should provide a narrative description of company experience on projects with scientific and technical tasks similar to those required in the Statement of Work. This description should clearly show the relationship between the company's experience and the tasks required under the Statement of Work; the particular sciences addressed (e.g., design and fabrication of fiber optic sensors and sensor systems); and, provide details, such as project descriptions and identification of the sponsoring agencies.

(c) PAST PERFORMANCE

(a) Offerors shall submit the following information as part of their proposal. (*Offerors are encouraged to submit the information prior to other parts of the proposal to assist the government in reducing the length of the evaluation period.*) List the last five contracts or subcontracts completed by the offeror or predecessor companies during the past two years for services similar in nature to this requirement. Include in the five any current contracts or subcontracts for similar services that were awarded at least one year prior to the date of this solicitation. Offerors that have no similar previous or current contracts should provide the requested information for proposed subcontractors that will perform major or critical aspects of the requirement or for the proposed project manager or key personnel responsible for major or critical aspects of the requirement.

1. Name of contracting organization.
2. Contract number
3. Contract type
4. Total contract value
5. Description of the contract work
6. Contracting officer and telephone number
7. Contracting officer's representative, program manager, or similar official and telephone number

(b) Offerors shall contact the contracting organizations identified pursuant to paragraph (a) as soon as possible and request them to send past performance information on the identified contracts to the address in Block 7 of the face page of this solicitation. The past performance report which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/home.htm> is to be provided to the contracting organization for this purpose. If the contracting organization has already collected past performance

information on the contract pursuant to FAR Subpart 42.15, the format used to collect the information may be used instead of the past performance report.

(c) Offerors may include in their proposals specific information relating to problems encountered in performing the identified contracts and any corrective actions by the offeror. Offerors should not provide general information on their performance on the identified contracts as this will be obtained from the contracting organizations.

L-12 VOLUME II - BUSINESS PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 3 COPIES

(1) COST PROPOSAL

(a) The offeror shall submit a business proposal that includes a cost proposal with supporting information for each cost element consistent with offeror's cost accounting system. The supporting breakdown should include such elements as materials, direct labor, indirect cost, and other costs such as travel. The offeror shall provide exhibits as necessary to substantiate each cost element. Should rates be used in the proposal which are not DCAA approved, the offeror shall provide complete documentation and the rationale for their use at time of proposal submission. However, offerors are advised to use actual labor rates of proposed personnel as the basis for estimating labor costs when practicable.

(b) The following travel and material estimates are for evaluation purposes only.
The government estimates the travel and material costs for this effort to be as shown in the following matrix:

	Base Term	Option 1	Option 2	Option 3	Option 4
Materials	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000
Travel	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000

Travel and material elements are direct costs and the offeror should add applicable indirect cost, if any. All offers will be evaluated using the estimated amounts provided above .

(2) SMALL BUSINESS PARTICIPATION

(a) In addition to complying with the clause at FAR 52.219-9, Small Business Subcontracting Plan (JAN 2002) with its Alternate II (OCT 2000), proposals must include information to permit evaluation of the extent of participation of small businesses and historical black colleges or universities and minority institutions in performance of the contract. Participation to be identified may be in the form of a joint venture, teaming arrangement, or subcontract. Small business concerns that are not required by FAR 52.219-9 to submit a subcontracting plan must indicate the extent to which proposed joint ventures, teaming arrangements, or subcontracts are with historically black colleges or universities and minority

institutions. Information provided should include the extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

SECTION M EVALUATION FACTORS FOR AWARD

M-1 EVALUATION

Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed cost and other factors considered. The Government reserves the right to make award to other than the low offeror. Although technical considerations are more important than the cost factor, the closer the technical scores of the various proposals are to one another, the more important the business considerations become.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following criteria. The technical factor is more important than the cost factor. The technical subfactors are listed in descending order of importance with Personnel Qualifications being significantly more important than the remaining two technical subfactors.

M-2-1. TECHNICAL/MANAGEMENT

(a) PERSONNEL QUALIFICATIONS

The proposal will be evaluated on the offeror's demonstrated ability to provide personnel with: (1) the appropriate qualifications set forth in Attachment No. 2 of the Solicitation; (2) actual relevant experience in the technical and scientific areas set forth in the Statement of Work; and, (3) the ability to obtain a SECRET clearance of key personnel prior to commencing work.

(b) COMPANY EXPERIENCE

The proposal will be evaluated on the offeror's demonstrated company experience in performing projects requiring scientific and technical effort which is closely similar or related to the effort required by the Statement of Work.

(c) PAST PERFORMANCE

Past performance will be evaluated on the basis of the quality of the work performed, timeliness of performance, cost control, and business relations. The evaluation will be based on the information provided pursuant to Section L and other sources if available. The evaluation will take into account past performance information regarding predecessor companies, subcontractors that will perform major or

critical aspects of the requirement, or the proposed project manager or key personnel responsible for major or critical aspects of the requirement. Offerors that have no relevant performance history or for which past performance information is not available will not be evaluated favorably or unfavorably on past performance. The government may begin proposal evaluation prior to receipt of past performance information. If, after completion of proposal evaluation except evaluation of past performance, the contracting officer determines that evaluation of past performance will not affect the outcome of competitive selection, the contracting officer may waive its evaluation in accordance with FAR 15.304(c)(3)(IV).

M-2-3 SMALL BUSINESS PARTICIPATION

(a) The extent of participation of small businesses and historically black colleges or universities and minority institutions in performance of the contract will be evaluated on the basis of the proposed extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

(b) The extent of participation of small disadvantaged business concerns in performance of the contract will be evaluated on the basis of the proposed extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

M-3 FAR 52.217-5 - EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

STATEMENT OF WORK

OPTICAL TECHNIQUES, DEVICES AND MEASUREMENTS

1.0 Background

The Naval Research Laboratory (NRL) carries out a variety of research, development, and applications-oriented activities in the generation of sensing systems, integrated optics and communication systems. The research, both theoretical and experimental, is concerned with discovering and understanding the basic principles and mechanisms involved in optical devices, materials and phenomena. This work statement describes research to develop and produce optical techniques which are the subject of certain key research projects at the Naval Research Laboratory, Washington D.C.

2.0 Scope

2.1 These research efforts include a number of inter-related tasks that vary in both their technical dimensions and deliverable products. However, several tasks may support the same mission and must be coordinated or interfaced. These tasks include device research and development. The uniqueness of necessary experimental equipment dictate that a major portion of the tasks be performed at the Naval Research Laboratory. These tasks will deal with a number of programs including fiber optic acoustic sensors, electromagnetic sensors, fiber optic sensors for smart structures, chemical sensors, and high-speed optical modulators for sensing and communication links. In most of the sensor programs, work will involve system integration of a unique sensor design with an appropriate interrogation system to process sensor data. Sensor interrogation may require implementation of novel electronic and optical signal processing techniques, (such as wavelength division multiplexing) optimized for a particular application. Prototype versions of these systems will be field tested and the performance evaluated. The work on high speed optical modulators will focus on the design, fabrication, evaluation, and analysis of their performance. The design, fabrication and evaluation of new optical devices and electro-optic circuits in the areas of microwave photonics, laser transmitters, signal processing, microwave generation and microwave systems (e.g. radar and electronic warfare) are required. The development and fabrication of mid-infrared (2-12 μm) optical fibers and waveguide devices for IR-transmitting optical links, bright infrared sources, optical switching and other applications is also required.

The work will involve (a) field measurements and analysis of signatures, propagation effects, devices, and sensors, and (b) laboratory measurements and analysis of optical devices, systems and optical phenomena. In addition, the work will support the measurement programs by providing for the design and construction of electronic circuitry for control of optical systems. The work shall be performed at field sites in the US, at foreign sites, at sea, and at the Naval Research Laboratory (NRL), Washington, DC.

3.0 REQUIREMENTS

3.1 Development of Integrated Optic Phase Shifters, Frequency Shifters, and Modulators.

The contractor shall design, develop, fabricate and test optical components for integrated optical devices for phase shifting, frequency shifting, and high speed modulation of light. These components may be produced using both titanium diffused waveguides in lithium niobate and proton exchanged guides in either lithium niobate or lithium tantalate; other waveguide materials may be used as required.

3.2 Development and Testing of Fiber Optic Sensors and Systems for Point/Distributed Strain Sensing.

The contractor shall develop, assemble and test fiber optic sensors and sensor systems optimized for the sensing of various strain fields of interest to the Navy. These types of sensors include all fiber sensors that can detect strain levels in the microstrain, nanostrain and picostrain regime depending upon the application. Applications include structural integrity, static and dynamic load analysis and structural security monitoring. Both interferometric and non-interferometric sensors, such as fiber optic Bragg grating sensors shall be investigated. Detailed analysis of requirements of the strain monitoring application shall be provided by the contractor to produce the optimum system engineering and design approach. Development of these sensors shall include the fabrication of the opto-electronic system necessary to interrogate large arrays of these sensors for distributed strain mapping. The contractor shall investigate novel approaches to allow surveillance grade sensing with short gauge length of fiber for a range of Naval applications.

The contractor shall develop and test the appropriate optical interrogation techniques including frequency division multiplexing (FDM), time division multiplexing (TDM), wavelength division multiplexing (WDM), best suited for the particular application. The overall system design shall maximize the number of sensors that can be interrogated from a single optical fiber or pair of optical fibers. For structural monitoring the complete system, including the display of the data, must be provided, including real time shape analysis of structures from the strain measurements.

The contractor shall develop techniques and approaches to the fabrication of Bragg grating arrays which would result in high strength, low cost arrays for various sensing applications. The contractor may also be asked to develop techniques to incorporate these devices in various sensor system for Navy applications.

3.3 Development and Testing of Fiber Optic Acoustic Sensors.

The contractor shall develop fiber optic acoustic sensors and sensor systems for Navy surveillance and Anti Submarine Warfare (ASW) applications. The transducers range from conventional hydrostatic (pressure) acoustic sensors to sensors measuring acoustically induced acceleration, velocity or displacement. Fiber optic acoustic applications also include mobile (platform mounted) and fixed (seabed mounted) sensor arrays. Initial prototypes must be fabricated and tested, and packaged devices will be

tested at Navy calibration facilities. The contractor shall design, test and package interrogation and multiplexing approaches tailored to these transducers for evaluation in field test environments. Support of these field tests must also be provided. The contractor will be responsible for the development of demultiplexing and demodulation systems for fiber optic acoustic sensor systems. The contractor may also be asked to perform data analysis and performance verification of the acoustic fiber optic sensor design and compile the results in a test report.

The contractor shall investigate optical sources suitable for interferometric sensing. The contractor may be responsible for fabricating and characterizing fiber laser for both optical source and as sensors for various sensing applications. They may also be asked to develop components and circuits to improve the performance of fiber laser by reducing their inherent noise or stabilizing their output.

The contractor shall also perform research in the area of bio-chemical sensing, by developing methods to fabricate and test IR fiber microtips for near field infrared microscopy which utilizes sub-diffraction limit resolution. The contractor shall fabricate the IR fiber microtips and implement them in near field microscopy systems in collaboration with groups such as that at the Vanderbilt Free Electron Laser Center with intent of achieving spectroscopy with sub- μm resolution in the infrared.

3.4 Development and Analysis of Fiber Optic Electro-magnetic and Environmental sensors.

The contractor shall design and develop interferometric fiber optic magnetometers with increased performance for field deployable use. The fiber optic transducer and interrogating electro-optic system must be tailored for applications including the detection of underwater targets in shallow water environments and for heading sensors for towed arrays. Improvements must be provided in the areas of threshold detection and bandwidth. Data analysis from various field tests of fiber optic magnetometers shall be performed to determine system performance and optimization of algorithms for target detection and localization. Analysis of environmental geo-magnetic data from fiber optic magnetometer arrays shall be required to assess hardware and environmental limitations to non-acoustic undersea surveillance systems. In the area of fiber optic based heading sensors, systems for all optical towed arrays shall be developed, this includes both the transducer and the passive multiplexing approach required for these systems.

The contractor shall carry out analysis, design, integration, development, and test activities required to apply optical sciences to the area of pressure sensing. Prototype units must be designed, fabricated and tested for Navy applications.

The contractor shall carry out analysis, design, integration, development, and test activities required to apply optical sciences to the area of chemical sensing for applications such as monitoring of the environment. The contractor shall develop sensors to identify situations such as water in fuel, heavy metals in solution and dense non-aqueous liquids. The contractor shall use various sensing techniques to include refractive index measurements, visible light spectroscopy, infra-red spectroscopy, Raman spectroscopy, and Fourier transform infrared spectroscopy. The contractor shall develop techniques to perform the sensing remotely with optical fibers. The contractor shall operate government provided equipment to include diode lasers, choppers, lock-in

amplifiers, radiometric/interferometric probes, spectrometers and computer software for statistical analysis.

3.5 The development of photonic systems.

The contractor shall perform research in the area of optical devices and electro-optic circuits for microwave photonics, optical communication, and other optical systems. The contractor shall investigate the application of optics and fiber optics to microwave and communication systems. The contractor shall carry out analysis, design, test, and integration of component(s) and explore the system applications of laser transmitters, signal processing elements, microwave systems (e.g. radar and electronic warfare), optical fiber amplifiers, solid state lasers, quantum well modulators, free space and fiber optic communications, photodetectors and photoreceivers, fiber lasers, ultrafast communications, modulation and demodulation of light at microwave and millimeter-wave frequencies, GaAs MEMS, photonic analog-to-digital conversion, optical add/drop filters, time and wavelength-domain multi/demultiplexers, photonic control of phased array antenna systems, properties of optical fiber, and integrated optical devices for high-speed applications. New components and techniques shall be developed and studied to provide the optical carriers with the required parameters for the associated systems. New optical signal distribution systems shall be developed and studied to implement the required signal processing and distribution functions for Navy applications.

3.6 Field Measurements and Analysis for infrared signatures, electro-optical sensing and optical devices.

3.6.1 Infrared Signatures

The contractor shall perform measurements of the electro-optical (ultraviolet through infrared) signatures of aircraft, missiles, guns, bomb blasts, backgrounds and any other sources of infrared radiation significant to the design and development of detection and countermeasure systems. The contractor shall assemble the required instrumentation, calibrate and align the instrument~, provide for shipment to the appropriate sites, assemble and test the instruments, and perform the required measurements. The measurements will be performed at US land sites, at foreign sites, aboard ship, or at NRL, Washington, DC. The measurements shall include spatial, spectral, and temporal information. Supporting meteorological instrumentation must be included in the measurement program. A target tracking system must be utilized. The contractor shall be responsible for the on-site maintenance of the instrumentation used for the measurements. The contractor shall additionally perform the data reduction as required and provide analysis support of the data.

3.6.2 Electro-optical sensor testing.

The contractor shall conduct laboratory, rooftop, field, and airborne tests to analyze the performance of electro-optical sensors. Some rooftop data must be collected from rooftop pads on NRL buildings. Field tests will be conducted at NRL Chesapeake Bay Division, Naval Air Warfare Center, Patuxent River, MD, and Naval Air Warfare Center, China Lake CA. The contractor shall operate electro-optical sensors and record digital data using government equipment such as Redundant Array of Independent Disks (RAID) computer disks and AMPEX DCRSiTM tape recorders. The contractor shall implement signal processing algorithms on computers for real-time display and analysis of optical imagery.

3.6.3 Optical Devices Measurements

The contractor shall perform transmission measurements on optical devices at field sites. The contractor shall be capable of operating, maintaining, calibrating, and aligning transportable spectrum and sensors, automated data acquisition systems, broad band radiation sources, and detection system. The contractor shall assemble the measurement system, acquire the data, and assist in the reduction and analysis of the data.

3.7 Laboratory Measurements for infrared sources, laser countermeasures, electro-optical sensors

3.7.1 Infrared Sources

The contractor shall conduct measurements on laser and other infrared light sources. The contractor shall assemble and maintain the instrumentation needed to excite and sustain the sources. The contractor shall investigate alternate light sources for airborne infrared countermeasure systems and assess their suitability for use in systems.

3.7.2 Laser Countermeasure Measurements and Components.

The contractor shall investigate the means for countermeasuring laser guided or laser directed threats to US aircraft. The types of threat systems are rangefinders, designators, beam riders, and passive sensors and detectors. Threat systems shall be characterized as available, and their susceptibilities assessed. Countermeasure approaches shall be assessed and technologies critical to their employment shall be identified. Components and devices necessary for demonstrating countermeasure concepts and passive IR countermeasure techniques shall be developed and demonstrated.

3.7.3 Electronics for electro-optical sensors.

The contractor shall design, fabricate, customize, troubleshoot, maintain and operate custom electronic circuitry for operating electro-optical sensors and for processing information from these sensors. The contractor's responsibilities shall include applications programming in support of experimental computer controlled electro-optical sensor systems. The contractor shall implement both hardware and algorithms for operating electro optical sensors and processing the video images from these sensors. The contractor shall design electrical circuits. The contractor shall use government provided equipment including test electronics such as, oscilloscopes, logic analyzers voltmeters and custom computer interface boards. The contractor shall perform embedded system development including micro controllers as well as real-time programming techniques and operating systems such as VXWORKS, QNXTM, etc. The contractor shall perform analog circuit development involving high speed analog to digital conversion and signal conditioning.

3.7.4 Electro-optical device and sensor testing.

The contractor shall conduct laboratory and rooftop tests to analyze the performance of electro-optical devices and sensors. Some data must be collected from rooftop pads on NRL buildings. The contractor shall operate electro-optical sensors and record digital data using government equipment such as RAID computer disks and AMPEX DCRS1~ tape recorders. The contractor shall implement signal processing algorithms on computers for real-time display and analysis of optical imagery. The contractor must determine component specifications, acquire components, assemble circuits, test these circuits, and correct deficiencies.

3.8 Laboratory Measurements of Infrared Signatures

3.8.1 Infrared Range

The contractor shall operate and maintain an Infrared Range Facility. The contractor will assist users in the mounting of models, instrumenting the model and making all necessary electrical, mechanical, and plumbing connections to the customer's model. The contractor will organize, direct and facilitate the taking of data during the operation of the Infrared range. The contractor shall also maintain and operate a UV/VIS/IR spectrophotometers and related equipment needed to measure the properties of paints and low observable materials.

3.9 Research and Development of Communication Systems

The contractor shall conduct research in fiber optic and free space transmission links and the necessary components of the each. The contractor will investigate and develop optical and electro-optical devices such as modulated laser transmitters, Erbium-doped fiber amplifiers, Raman amplifiers, and photodiode receivers. The contractor shall characterize and improve the performance of said devices, which are critical in the development of low noise communication systems.

3.10 Sensor Measurements, Analysis, and Development

3.10.1. Reconnaissance System Integration

The contractor shall assemble cameras, sensors, electronics, and other subsystems into pods and aircraft, providing for the mechanical fit and providing the cabling for control signals, data streams, and power. The contractor shall also perform installation of components such as optical windows, antennas, and vibration isolation mounting brackets needed for equipment support.

3.10.2. Sensor Field and Flight Testing

The contractor shall support field and flight testing of sensors by designing and assembling the utilities such as power and temporary shelter needed at experimental field sites and in support of flight test programs. The contractor shall operate visible and infrared band sensor systems in field measurement trials, perform analysis, and provide reports on the acquired data. The contractor shall provide for the safe storage and shipment of equipments needed for field measurements, shall assemble the equipments at the field sites, and shall disassemble and return the equipment to NRL as needed on completion of the measurement program.

3.10.3. Laboratory Measurements

The contractor shall perform laboratory measurements of optical and infrared sensor systems and of sensor components such as focal plane arrays. The contractor shall design experimental approaches, conduct experiments, and analyze the test results. The contractor shall perform laboratory measurements of infrared guided missile seeker heads, including imaging seeker systems, and shall perform analyses of the test data.

3.10.4. Image Analysis

The contractor shall analyze multispectral image data, and investigate techniques for image fusion of these data. The contractor shall investigate the resolution and target detection capability using multispectral and multiframe image data.

3.10.5. Instrumentation

The contractor shall perform calibration, alignment, and repair of electronic circuits in electro-optical instrumentation, and shall design, assemble, and construct specialty electronic circuits as required. The contractor shall maintain a capability to troubleshoot and repair electronic instruments.

3.11 Research and Development of Infrared-Transmitting Fibers and Devices

The contractor shall conduct research and development in the area of mid-IR transmitting optical fibers and planar waveguide devices. This work will include the development of methods to purify, fabricate and fiberize chalcogenide materials (S, Se, or Te-based) as well as tellurite materials (based on TeO_2). These materials will be either undoped, to serve as IR transmission conduits, or will be doped with various rare earth elements (e.g. Pr, Er) to be light sources in the infrared. The contractor shall also characterize the fiber properties and light emission properties such as efficiency and lifetime of the doped optical fibers, and develop ways to utilize them as practical IR sources or amplifiers. The contractor shall also study the nonlinear properties of these fibers to determine their utility for novel optical devices.

In addition, the contractor shall conduct research and development in the area of novel infrared planar waveguide structures, by utilizing thin film samples made in-house, and developing methods to locally modify the refractive index using high intensity radiation. The contractor shall characterize these structures and investigate ways to utilize them for high speed optical switching and other related applications.

3.12 Organic Opto-electronic Materials and Devices

The contractor will synthesize, purify and characterize organic electronic and optoelectronic materials such as novel electron transporters with high mobilities and electron affinities. The development of the new materials will include carrier transporters with good thermal and morphological stability. The contractor will modify the optical and electrical properties of transparent conducting polymers via molecular engineering. These polymers will be evaluated as potential transparent electrode materials for all plastic electro-optic devices such as organic light-emitting diodes (OLEDs). OLEDs with an "inverted structure" (metal cathode at the bottom, transparent anode on top) will be fabricated and characterized in comparison to a control device with the regular structure (transparent anode at the bottom, metal cathode on top). The contractor will optimize the device structures for high electroluminescence quantum efficiency and long-term stability. The contractor shall build on active matrix arrays which will be developed elsewhere. The active matrix-OLED devices will be tested for luminous power efficiency, brightness and degradation effects.

3.13 Chemical, Biological and Radiation Sensing

The contractor shall design and develop optical techniques to be used in the area of chemical and biological sensing. These techniques may utilize luminescent quantum dots used in conjunction with biological molecules and may involve a wide range of spectroscopic techniques, including, for example, fluorescence resonance energy transfer.

The contractor shall design and develop software to control commercial scientific equipment, experimental instrument prototypes and the nanochannel glass draw tower facility. Applications for this software include the control of radiation sensing and imaging devices. The contractor will design and fabricate specialized nanochannel glass materials using the draw tower facility. Applications for the nanochannel glass materials include chemical sensing and fiberoptic communications.

3.14 Infrared Source Development and Testing

The contractor shall develop laser and other infrared light sources to be used in airborne infrared countermeasures and other applications. The contractor shall conduct measurements on prototype devices. The contractor shall assemble and maintain the optical and electronic instrumentation needed to excite and sustain the sources. That shall include both optical pumping by a variety of solid state and diode sources, as well as electrical injection. Measurements to be performed shall include photoluminescence and electroluminescence spectroscopy, lasing spectroscopy, light-light and light-current characteristics, near-field and far-field measurements. Other characterization shall include such properties as the non-radiative lifetimes, internal losses, and anti-guiding parameters.

3.14.1 Infrared Source Fabrication

The contractor shall optimize the processing of semiconductor infrared sources for efficient thermal management. Molecular beam epitaxy shall be carried out to grow quantum heterostructures with favorable properties, and the MBE machine and laboratory shall be maintained. Metal, dielectric, and semiconductor thin film depositions will also be carried out by a variety of methods such as e-beam evaporation, sputtering, and thermal evaporation. The contractor shall carry out device cleaving and epitaxial-side-down soldering. The contractor shall design masks and pattern of one-dimensional and two-dimensional gratings using methods such as optical and e-beam lithography, and wet chemical etching as well as reactive ion etching.

3.14.2 Novel Photonic Materials Fabrication and Testing

The contractor shall design, fabricate, and test novel electronic and optoelectronic components including photonic bandgap devices based on non-standard material systems such as nitride-containing III-V compounds and diamond. Methods for etching novel wide-gap III-V materials will be developed and optimized, employing such techniques as inductively-coupled reactive ion etching and capacitively-coupled reactive ion etching. Other responsibilities will include mask design and development, as well as patterning by e-beam and optical lithography. Fabricated devices will be characterized by such methods as atomic force microscopy, scanning electron microscopy, ellipsometry, and various other microscopy techniques. Optical characterization of the fabricated devices will also be carried out by a variety of methods.

3.14.3 Optical Limiter Materials Characterization

The contractor shall prepare samples of optical limiter materials and perform measurements of their linear and nonlinear optical properties. The contractor shall be responsible for operating, maintaining, calibrating, and aligning the radiation sources, including lasers and optical parametric oscillators, sensors, automated data acquisition systems, and detection systems. The contractor shall assemble and calibrate the measurement systems, acquire the data, and assist in the reduction and analysis of the data. The contractor shall perform the design, development, integration and assembly of optical limiter modules suitable for both internal and field tests. The contractor shall ensure the suitability of the limiter modules in cooperation with personnel performing field tests.

3.14.4 Polymer Optical Materials Development

The contractor shall prepare and conduct the optical characterization of polymer/dye materials suitable for optical limiting. The contractor shall be responsible for operating and maintaining polymer extrusion and molding equipment to achieve close control over both the polymer properties and the concentration and aggregation of dye material. The contractor shall be capable of operating, calibrating, and aligning the lasers, sensors, data acquisition and detection systems required for the optical characterization. The contractor shall fabricate the samples, acquire and analyze the optical data and elucidate the photophysics of different polymer/host combinations. The contractor shall cooperate closely with collaborators who use the results of this work to produce nanostructured materials.

4.0 Deliverables

The contractor shall provide the following:

4.1 Monthly cost reports within 15 days of the close of each monthly reporting period. This report shall include a report of all labor expenditures (person, hours worked, and cost); materials (description, cost, and use on contract); and travel (person's name, dates of trip, reason for trip, and cost).

4.2 Monthly onsite labor reports within 12 days of the close of each monthly reporting period. This report shall include a report of all labor hours worked (person, hours worked).

4.3 Quarterly letter/technical reports, it shall include progress made for the quarter and work planned for the following quarter. These reports shall also include a description Of all comprehensive findings obtained on the contract during the contract's current reporting period, as determined in the execution of the research described in Section 3.0 herein, and, in addition, all drawings and/or test results obtained.

4.4 A final technical report to the COR within sixty days of completion of this contract. This report shall include a comprehensive summary of findings on this contract.

Form Approved
OMB No. 0704-0188

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY:
0002	A	TOP _____ TM. _____ OTHER _____ F

D. SYSTEM / ITEM	E. CONTRACT / PR NO.	F. CONTRACTOR
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1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE
A001	Monthly Cost Reports	

4. AUTHORITY <i>(Data Acquisition Document No.)</i> <p style="text-align: center;">N/A</p>	5. CONTRACT REFERENCE <p style="text-align: center;">SOW 4.1</p>	6. REQUIRING OFFICE <p style="text-align: center;">NRL CODE 5670</p>
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY MONTHLY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
					b. COPIES

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE					
N/A	See Block 16		<table border="1"> <tr> <td rowspan="2">Draft</td> <td colspan="2">Final</td> </tr> <tr> <td>Reg</td> <td>Repre</td> </tr> </table>	Draft	Final		Reg	Repre
Draft	Final							
	Reg	Repre						

18. REMARKS	AO Code 5602	0	1	0
Monthly cost reports within 15 days of the close of each monthly reporting period. This report shall include a report of all labor expenditures (person, hours, worked, and cost); materials (description, cost, and use on contract); and travel (person's name, dates of trip, reason for trip, and cost).	COR	0	1	0

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE
A002	Quarterly Letter/Technical Reports	

4. AUTHORITY (Data Acquisition Document No.)	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
N/A		NRL CODE 5670

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT		QUARTERLY			b. COPIES

8. APP CODE	N/A	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COMMENTS		
N/A					Draft	Final	
						Reg	Repro

18. REMARKS	COR	0	1	0
It shall include progress made for the quarter and work planned for the following				

quarter. These reports shall also include a description of all comprehensive findings obtained on the contract during the contract's current reporting period as determined in the execution of the research described in Section 3.0 herein, and, in addition, all drawings and/or test results obtained.

15. TOTAL	→	0	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
NRL Code 5670	3/15/02		

17. PRICE GROUP	
18. ESTIMATED TOTAL PRICE	

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002		B. EXHIBIT A		C. CATEGORY: TOP _____ TM _____ OTHER _____ F		
D. SYSTEM / ITEM		E. CONTRACT / PR NO.		F. CONTRACTOR		
1. DATA ITEM NO. A003	2. TITLE OF DATA ITEM Final Technical Report			3. SUBTITLE		
4. AUTHORITY (Data Acquisition Document No.) N/A		5. CONTRACT REFERENCE SOW 4.4		8. REQUIRING OFFICE NRL CODE 5670		
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY ONCE	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
16. REMARKS A final technical report to the COR within sixty (60) days of completion of this contract. This report shall include a comprehensive summary of findings on this contract.					Draft	Final
				15. TOTAL		
1. DATA ITEM NO.		2. TITLE OF DATA ITEM		3. SUBTITLE		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		8. REQUIRING OFFICE		
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION		
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
16. REMARKS					Draft	Final
15. TOTAL						
G. PREPARED BY NRL Code 5670		H. DATE 3/15/02	I. APPROVED BY		J. DATE	

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO. 0002		B. EXHIBIT A		C. CATEGORY: TDP _____ TM _____ OTHER _____ F							
D. SYSTEM / ITEM		E. CONTRACT / PR NO.		F. CONTRACTOR							
1. DATA ITEM NO. A004	2. TITLE OF DATA ITEM Contractor On-Site Labor Report			3. SUBTITLE							
4. AUTHORITY (Data Acquisition Document No.) N/A		5. CONTRACT REFERENCE SOW 4.2		6. REQUIRING OFFICE NRL CODE 5670							
7. DD 250 REQ LT	8. DIST STATEMENT REQUIRED	10. FREQUENCY MNTLY	12. DATE OF FIRST SUBMISSION 30 DAC	14. DISTRIBUTION							
8. APP CODE N/A	N/A	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES						
					Draft						
					Final						
					Reg						
					Repro						
10. REMARKS The Contractor shall deliver the On-Site Labor Report no later than twelve (12) days after the end of each reporting month. The report must include as a minimum the following data: Reporting Period: Contract Number (and Order Number, if applicable): Contract Value: Current Funding: Amount Expended in Current Period: Total Expended to Date: Date Submitted: Labor (including subcontractors) - Show employee name, number of hours, and total amount billed for contractor employees working on-site at NRL. If the contractor employees worked on multiple tasks (as defined by the COR), the numbers of hours worked on each task must be shown separately.				A0 Code 5602	0	1	0				
				AO CODE	0	1	0				
								15. TOTAL	0	2	0
				G. PREPARED BY NRL CODE 5670		H. DATE 3/15/02		I. APPROVED BY			
				J. DATE							

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

**DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION**
(The requirements of the DoD Industrial Security Manual apply
to all security aspects of this effort.)

1. CLEARANCE AND SAFEGUARDING SER: 011-02

a. FACILITY CLEARANCE REQUIRED

TOP SECRET

b. LEVEL OF SAFEGUARDING REQUIRED

SECRET

2. THIS SPECIFICATION IS FOR: (X and complete as applicable)

3. THIS SPECIFICATION IS: (X and complete as applicable)

a. PRIME CONTRACT NUMBER

☒

a. ORIGINAL (Complete date in all cases)

DATE (YYYYMMDD)

20020214

b. SUBCONTRACT NUMBER

b. REVISED
(Supersedes all
previous specs)

REVISION NO.

DATE (YYYYMMDD)

☒ c. SOLICITATION OR OTHER NUMBER

DUE DATE (YYYYMMDD)

56-9003-02

c. FINAL (Complete Item 5 in all cases)

DATE (YYYYMMDD)

4. IS THIS A FOLLOW-ON CONTRACT?

☐ YES

☒

NO. If Yes, complete the following:

Classified material received or generated under

(Preceding Contract Number) is transferred to this follow-on contract.

5. IS THIS A FINAL DD FORM 254?

☐ YES

☒

NO. If Yes, complete the following:

In response to the contractor's request dated

, retention of the classified material is authorized for the period of

6. CONTRACTOR (Include Commercial and Government Entity (CAGE) Code)

a. NAME, ADDRESS, AND ZIP CODE

b. CAGE CODE

c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)

FOR RFP PURPOSES ONLY, NOT VALID FOR
ACTUAL CONTRACT AWARD

N/A

7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE

b. CAGE CODE

c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)

N/A

N/A

8. ACTUAL PERFORMANCE

a. LOCATION

b. CAGE CODE

c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)

N/A

N/A

9. GENERAL IDENTIFICATION OF THIS PROCUREMENT

OPTICAL TECHNIQUES, DEVICES AND MEASUREMENT

10. CONTRACTOR WILL REQUIRE ACCESS TO:

YES

NO

a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION

☒

b. RESTRICTED DATA

☒

c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION

☒

d. FORMERLY RESTRICTED DATA

☒

e. INTELLIGENCE INFORMATION

☒

(1) Sensitive Compartmented Information (SCI)

☒

(2) Non-SCI

☒

f. SPECIAL ACCESS INFORMATION

☒

g. NATO INFORMATION

☒

h. FOREIGN GOVERNMENT INFORMATION

☒

i. LIMITED DISSEMINATION INFORMATION

☒

j. FOR OFFICIAL USE ONLY INFORMATION

☒

k. OTHER (Specify)

11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:

YES

NO

a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER
CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY

☒

b. RECEIVE CLASSIFIED DOCUMENTS ONLY

☒

c. RECEIVE AND GENERATE CLASSIFIED MATERIAL

☒

d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE

☒

e. PERFORM SERVICES ONLY

☒

f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S.,
PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES

☒

g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION
CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER

☒

h. REQUIRE A COMSEC ACCOUNT

☒

i. HAVE TEMPEST REQUIREMENTS

☒

j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS

☒

k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE

☒

l. OTHER (Specify)

12. **PUBLIC RELEASE.** Any information (*classified or unclassified*) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release ☐ Direct ☒ Through (*Specify*)

COMMANDING OFFICER, NAVAL RESEARCH LABORATORY, WASHINGTON, DC 20375-5320, CODE 5670.

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. **SECURITY GUIDANCE.** The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (*Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.*)

Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract, the successful contractor will be required to have a TOP SECRET facility clearance, SECRET storage capabilities, and personnel available with DoD granted personnel security clearances commensurate with level of access required for performance of contract.

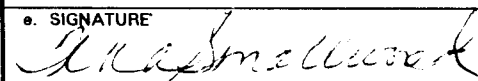
14. **ADDITIONAL SECURITY REQUIREMENTS.** Requirements, in addition to ISM requirements, are established for this contract. ☐ Yes ☒ No
(*If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.*)

15. **INSPECTIONS.** Elements of this contract are outside the inspection responsibility of the cognizant security office. ☐ Yes ☒ No
(*If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.*)

16. **CERTIFICATION AND SIGNATURE.** Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL TINA SMALLWOOD	b. TITLE CONTRACTING OFFICER, SECURITY	c. TELEPHONE (<i>Include Area Code</i>) (202)767-2240/2521
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d. ADDRESS (*Include Zip Code*)
NAVAL RESEARCH LABORATORY
4555 OVERLOOK AVE., SW
WASHINGTON DC 20375-5320

e. SIGNATURE


17. **REQUIRED DISTRIBUTION**

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | a. CONTRACTOR |
| <input type="checkbox"/> | b. SUBCONTRACTOR |
| <input checked="" type="checkbox"/> | c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR |
| <input type="checkbox"/> | d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION |
| <input type="checkbox"/> | e. ADMINISTRATIVE CONTRACTING OFFICER |
| <input checked="" type="checkbox"/> | f. OTHERS AS NECESSARY 1221.1, 5670, 5602 |

OPTICAL TECHNIQUES, DEVICES AND MEASUREMENTS

PERSONNEL QUALIFICATIONS

The following are a list of desired qualifications:

PHYSICIST/ELECTRICAL ENGINEER I

Doctorate in Physics/Engineering with at least 5 years experience in the area of integrated optics and thin film devices and characterization. Should have hands on experience with optical measurements of integrated optic devices. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

PHYSICIST/ELECTRICAL ENGINEER II

Master of Science Degree with at least 10 years experience in the area of fiber optic sensors. Knowledge and experience in the understanding, characterization and modeling of noise in fiber optic electro-magnetic, and other interferometric sensors. Background in fiber optic interferometry and sensor fabrication. Background in the area of deployable fiber optic sensor systems. Experience in field testing of fiber optic interferometric sensor systems is essential. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

PHYSICIST/ELECTRICAL ENGINEER III

Doctorate in Physics/Engineering with at least 10 years experience in the area of fiber optic sensing. Background in fiber optic interferometry and sensor fabrication. Knowledge and experience of fiber optic electro-magnetic sensing including the transduction mechanisms and the interrogation of these sensors. Experience in the area of passive demodulation of fiber optic sensors specifically electro-magnetic sensors. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

PHYSICIST/ELECTRICAL ENGINEER IV

Master or Doctorate level in Physics/Engineering with at least 5 years experience in the area of fiber optics. Background in fiber optic interferometry and sensor fabrication. Knowledge and experience in the area of fiber optic sensors, their fabrication and their characterization. Experience in the area of fiber components and devices.

PHYSICIST/ELECTRICAL ENGINEER V

M.S. in physics/Engineering or equivalent. Minimum of ten years experience in device physics and data collection with knowledge of analog and digital electronics for data acquisition and related software. Knowledge of multi-spectral electro-optical

sensors. Experience with MSDOS, and Windows. Should also have the ability to develop electronic hardware and software for data acquisition.

PHYSICIST/ELECTRICAL ENGINEER VI

Master or Doctorate level in Physics/Engineering or equivalent with at least 3 years experience in the area of optical fiber devices and systems, their fabrication and their characterization. Experience in the area of optical components and devices. Experience in the area of testing optical systems.

PHYSICIST/ELECTRICAL ENGINEER VII

M.S. or Ph.D. or equivalent experience in physics or electrical engineering. Specialized experience in electro-optics, infrared (IR) signatures, IR simulation, IR detectors, IR sensor design and measurements of electro-optical phenomenon from uv through IR. Extensive experience in signal processing techniques, modeling of missile and aircraft signature, and simulation of sensor performance .

PHYSICIST/ELECTRICAL ENGINEER VIII

Ph.D. or equivalent experience in physics, chemistry or physical chemistry. Specialized experience is required in: physical chemistry, chemical instrumentation, spectroscopy for the design and preparation of new chemical systems through molecular engineering ; polymerization of novel organic systems and thin film deposition of conjugated organic systems such as fullerenes, phthalocyanines, etc. and the preparation of characterization of these samples for optical devices ; experience in high vacuum deposition systems and in the setup and operation of nonlinear optical experiments to study optical limiting, second harmonic generation , etc.

PHYSICIST/ELECTRICAL ENGINEER IX

M.S. or Ph.D. in Engineering/Physics or equivalent. Minimum of three years experience in vapor deposition of organic materials. Experience in the area of characterization of organic materials. Working experience with polymer electroluminescence devices.

RESEARCH CHEMIST I

Ph. D. chemist with more than ten years of experience in the research and development of nonlinear optical techniques and lasers for pointing, ranging, and targeting applications. Thorough working knowledge of solid-state laser design as well as familiarity with such nonlinear optical processes as stimulated Raman and Brillouin scattering, parametric frequency conversion, and four wave mixing. Experience in chemical research involving full cell electrode ReD, optical spectroscopy picosecond laser experiments, and optical hole burning experiments. Extensive experience with CW (Ar⁺ and Kr⁺), pulsed (N₂ and Nd:YAG), and dye (linear and ring configuration) lasers, high-resolution optical techniques, cryogenics, spectroscopy, electrochemistry, catalysis, colloid chemistry, and applications of computers to experimental automation and theoretical modeling. His/her work in the field must be of such significance and

competence as to have established him/her as an authority in nonlinear optical techniques and lasers for pointing, ranging, and targeting applications. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

RESEARCH CHEMIST II

Master or Doctorate level with experience in the area research and development of sensors for IR spectroscopy and the remote detection of hydrocarbons.

ENGINEERING ASSOCIATE I

Bachelors degree in Physics/Engineering with at least five years experience in the field of fiber optics, fiber optic sensing and acoustic sensing. Knowledge and experience of transduction mechanisms and operation of fiber optic acoustic sensors. Knowledge of requirements of Navy acoustic sensor systems. Experience of field deployable fiber optic acoustic sensor systems is essential.

ENGINEERING ASSOCIATE II

Bachelors degree in Physics/Engineering with at least five years experience in fiber optic sensors, fiber optic strain sensors and optical interrogation of fiber optic sensors. Knowledge and experience of remote interrogation approaches of fiber interferometric sensors, multiplexing of fiber sensors and electronic implementation of noise reductions schemes. Experience in the area of fiber optic Bragg grating sensors for strain measurement, as well as multiplexing approaches for fiber optic Bragg grating sensors. Experience in the area of field deployable fiber optic sensor systems is essential. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

ENGINEERING ASSOCIATE III

Bachelors/Masters degree in Physics/Engineering with 3 years experience in the area of developing interrogation systems for fiber optic Bragg grating sensors. Knowledge and experience in the area of computer based systems for interrogating and measuring strain levels from multiplexed fiber Bragg grating arrays. This scientist must have good written and oral communications skills as evidenced by publications and presentations at conferences.

ENGINEERING ASSOCIATE IV

B.S. in Engineering or equivalent. Minimum of three years experience in electronics. Knowledge of design, fabrication, and operation of digital circuits. Knowledge of and hardware implementation experience in analog buffering and analog-to-digital conversion. Experience with ORCAD, UNIX, C/C++, XWindows, MSDOS, and networking software.

ENGINEERING ASSOCIATE V

Bachelors/Masters degree in Physics/Engineering or equivalent with 3 years of experience in the area of material sciences, optical sensors and/or sensing technology. Experience in the area of field testing optical systems.

ENGINEERING ASSOCIATE VI

B.S. in Electrical Engineering or equivalent. Minimum of ten years experience in solid-state rare earth laser compounds and mid-infrared detector materials. Working knowledge of electro-optic, magnetic, cryogenic, electronic, and digital electronic equipment. Knowledge and experience in the maintenance and operation of infrared lasers.

DATA ANALYST/COMPUTER SPECIALIST I

M.S. in Electrical Engineering/physics or equivalent. Minimum of three years experience in signal processing and data collection with knowledge of analog and digital electronics for data acquisition and related software. Knowledge of signal processing for multi-spectral electro-optical sensors. Experience with UNIX, C/C++, MATLAB, MSDOS, and Windows NT.

DATA ANALYST/COMPUTER SPECIALIST II

Senior programmer with a minimum of 5 years experience in machine level programming and graphical user interfaces. Experience with UNIX, C/C++, XWindows, MSDOS, Windows NT, Open VMS, Fortran, Ethernet hardware and software

SENIOR TECHNICIAN I

At least 10 years of experience as an electronics technician on military electro-optics, radars, and weapon systems for Navy, civilian, and research and development communities. Experience in optical sensors and systems for missile approach warning. Proficient in the safe and proper operation of tools and equipment used in electronics, metal working, woodworking, and automotive/heavy equipment repair. Must be flight qualified or capable of passing the Navy requirements to be flight qualified in order to act as operators of the electro-optical sensors on an NRL P-3 aircraft and have electrical engineering skills for operating and maintaining these sensors. Must indicate if he has a current qualification as a project specialist or, if not, whether each is known to have an existing condition that would prevent qualification as a project Specialist. The qualification for project specialist are governed by OPNAVINST 3710.7N. Good written and communications skills for developing technical briefings and reports as demonstrated by previous reports under previous contracts.

SENIOR TECHNICIAN II

At least ten years of experience as an electronics technician on military electro-optics, radars, and aircraft systems for Navy, civilian, or research and development communities. Proficient in the safe and proper operation of tools and equipment used in electronics, metal working, woodworking, and automotive/heavy

equipment repair. Experience in aircraft power and systems interface as demonstrated under previous contracts.

SENIOR TECHNICIAN III

At least ten years of experience as an engineering technician on electronics design, fabricating and trouble-shooting of electronics for Navy, civilian, or research and development communities. Experience in analog, digital, and computer fundamentals. Experience with ORCAD design software, surface mounting of electronics components, and PC board layout and populating. Good written and communications skills for developing report.

ELECTRONICS TECHNICIAN I

At least five years experience in the area of electro-optics or electronics. Experience in the area of electronic circuit construction and testing. Experience in the area of circuit design and fabrication. Basic background in analog and digital circuitry.

ELECTRONICS TECHNICIAN II

At least eight years of experience as an electronics technician on electronics design, fabricating and trouble-shooting of electronics for Navy, civilian, or research and development communities. Experience in analog, digital, and computer fundamentals. Experience with design software and surface mounting of electronics components. Good written and communications skills for developing report.

ELECTRONICS TECHNICIAN III

At least ten years of experience in aircraft, shipboard, ground vehicle, subsurface, and shore-based electronic and mechanical systems installations. Must have at least ten years of experience providing field and laboratory support for scientific research and development activities in support of scientific programs using P-3 aircraft. Skills shall include systems integration, test and evaluation, instrumentation, optics, radar, navigation, project/program management, test planning and preparation, test execution, and project logistics.

ELECTRONICS TECHNICIAN IV

At least ten years of experience in melting glasses of consistent high optical quality for use in perform processing. Experience in making performs utilizing traditional and non-traditional methods, which are virtually free of defects. Knowledge of different perform making processes including core-injection, spin-cast, and spin-cast-fill techniques. Experience in the design and construction of glass melting furnaces and the collapse units.

TECHNICIAN I

At least ten years experience in the area of the fabrication of fiber optic sensors. Should be both knowledgeable and experienced in the area of handling optical fiber and fiber optic transducers. Should have experience in the area of packaging and field testing fiber optic interferometric sensors. Should be familiar with standard fusion machines and standard techniques for transducer and sensor packaging.

TECHNICIAN II

At least two years experience in the area of fiber optics, electro-optics or electronics. Experience in the area of sensors or communication systems. Experience in the area of packaging and field testing optical devices. Background in analog and digital circuitry would be useful for prototype fabrication and testing.

TECHNICIAN III

At least eight years of experience in coordinating programs for various contractor statement of work tasks. General knowledge of administrative office procedures and experience executing these procedures.

LIST OF PARTIES INTERESTED IN TEAMING

TEAMING PREFERENCE - PRIME

LeaTech, LLC
1450 South Rolling Road
Baltimore, MD 21227
(410) 455-5845
E-mail: mphamner@leatechllc.com

TEAMING PREFERENCE - SUBCONTRACTOR

SY Technology
654 Discovery Drive
Huntsville, AL 35806
POC: Paul G. Cox
Phone: (256) 705-5900 x632
E-mail: pcox@sy.com